



Bayway Refinery  
P.O. Box 222  
1400 Park Avenue  
Linden, New Jersey 07036

Certified Mail - RRR  
7010 1870 0000 6667 5987

February 28, 2012

US Environmental Protection Agency  
Ariel Rios Building  
Mail Code 2254A  
1200 Pennsylvania Avenue, NW,  
Washington, DC 20460  
Attn: Robert G. Heiss, Director  
International Compliance Assurance Division

2011 Annual Export Report  
NJD 986 645 984

Dear Mr. Heiss:

As required by Section 3017 of the Resource Conservation and Recovery Act and under Federal regulations 40 CFR Sections 262.56 and 262.87(a), I submit the "Annual Report of Hazardous Waste Exports for 2011" and waste minimization statements for the ConocoPhillips owned and operated Bayway Refinery.

Contact me at (908) 523-5732 if you need additional information.

Sincerely,

Hans Sidler  
Waste Compliance Engineer

c: Pete Hanley

received  
SDN 3/6/12

FIRST CLASS  
Bayway Refinery  
P.O. Box 222  
1400 Park Avenue  
Linden, NJ 07036

ConocoPhillips

CERTIFIED MAIL

7010 1870 0000 6667 5987



First Class Mail  
First Class Mail

Robert G. Heiss, Director  
USEPA Int'l Compli. Assur. Div.  
Mail Code 2254A  
1200 Pennsylvania Avenue, NW  
Washington DC 20460

## ANNUAL REPORT OF HAZARDOUS WASTE EXPORTS FOR 2011

## 1. PRIMARY EXPORTER (Consignor)

Name: ConocoPhillips Company / Bayway Refinery  
EPA ID No.: NJD 986645984  
Mailing Address: P.O. Box 222  
City: Linden State: New Jersey Zip: 07036

## 2. CONSIGNEE

Name: STABLEX Canada, Inc.  
Address: 760 Industrial Blvd.  
Blainville, Quebec Canada J7C3V4  
EPA ID No.: NYD 980756415

3. TRANSPORTER No. 1: Name: Freehold Cartage Inc.  
EPA ID No.: NJD 054126164  
TRANSPORTER No. 2: Name: Transport Rollex Limitee  
EPA ID No.: NYF 006000053  
TRANSPORTER No. 3: Name: \_\_\_\_\_  
EPA ID No.: \_\_\_\_\_

## 4. WASTE INFORMATION

Description of Waste: Spent Sandblast Abrasives  
EPA Waste Numbers: D008  
DOT Proper Shipping Name: RQ Waste Environmentally Hazardous Substance,  
Solid, n.o.s., (D008), III, RQ-10 (Lead)  
DOT Hazard Class: 9 DOT ID Code (UN/NA): UN 3077

## 5. SHIPPING INFORMATION

Number of Shipments during the Calendar Year: 2  
Total Volume of this Waste Shipped: 17.89 tons


## 6. WASTE MINIMIZATION STATEMENT

☐ Not Required (See Instructions)  
☐ Submitted with EPA Biennial Report  
☒ Attached

## 7. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Name of Responsible Official: Hans Sidler Title: Waste Compliance Engineer

Signed: Date: 2/28/2012



## ANNUAL REPORT OF HAZARDOUS WASTE EXPORTS FOR 2011

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Blainville, Quebec Canada J7C3V4  
EPA ID No.: NYD 980756415

3. TRANSPORTER No. 1: Name: Transport Rollex Limitee  
EPA ID No.: NYF 006000053  
TRANSPORTER No. 2: Name: \_\_\_\_\_  
EPA ID No.: \_\_\_\_\_

## 4. WASTE INFORMATION

Description of Waste: Lead Acid Batteries  
EPA Waste Numbers: D002, D008  
DOT Proper Shipping Name: RQ Waste Batteries, Wet, Filled with Acid,  
PG III  
DOT Hazard Class: 8 DOT ID Code (UN/NA): UN 2794

## 5. SHIPPING INFORMATION

Number of Shipments during the Calendar Year: 2  
Total Volume of this Waste Shipped: 2.96 tons

## 6. WASTE MINIMIZATION STATEMENT

☐ Not Required (See Instructions)  
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Name of Responsible Official: Hans Sidler Title: Waste Compliance Engineer

Signed: Date: 2/28/12

## ANNUAL REPORT OF HAZARDOUS WASTE EXPORTS FOR 2011

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Name: STABLEX Canada, Inc.  
Address 760 Industrial Blvd.  
Blainville, Quebec Canada J7C3V4  
EPA ID No.: NYD 980756415

3. TRANSPORTER No. 1: Name: Transport Rollex Limitee  
EPA ID No.: NYF 006000053  
TRANSPORTER No. 2: Name: \_\_\_\_\_  
EPA ID No.: \_\_\_\_\_

## 4. WASTE INFORMATION

Description of Waste: Mixed Batteries  
EPA Waste Numbers: D003, D006, D011, D008  
DOT Proper Shipping Name: RQ Waste Batteries, Dry, Containing Potassium Hydroxide Solid, PG III,  
DOT Hazard Class: 8 DOT ID Code (UN/NA): UN3028

## 5. SHIPPING INFORMATION

Number of Shipments during the Calendar Year: 4  
Total Volume of this Waste Shipped: 0.81 tons

## 6. WASTE MINIMIZATION STATEMENT

☐ Not Required (See Instructions)  
☐ Submitted with EPA Biennial Report  
☒ Attached

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Name of Responsible Official: Hans Sidler Title: Waste Compliance Engineer

Signed: AK e J

Date: 2/28/2012

## ANNUAL REPORT OF HAZARDOUS WASTE EXPORTS FOR 2011

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City: Linden State: New Jersey Zip: 07036

## 2. CONSIGNEE

Name: STABLEX Canada, Inc.  
Address 760 Industrial Blvd.  
Blainville, Quebec Canada J7C3V4  
EPA ID No.: NYD 980756415

3. TRANSPORTER No. 1: Name: Transport Rollex Limitee  
EPA ID No.: NYF 006000053  
TRANSPORTER No. 2: Name: \_\_\_\_\_  
EPA ID No.: \_\_\_\_\_

## 4. WASTE INFORMATION

Description of Waste: Catalyst (Zinc Oxide)  
EPA Waste Numbers: K171  
DOT Proper Shipping Name: Waste Environmentally Hazardous Substance,  
n.o.s., (K171), III, RQ-1 (K171)  
DOT Hazard Class: 9 DOT ID Code (UN/NA): UN3077

## 5. SHIPPING INFORMATION

Number of Shipments during the Calendar Year: 1  
Total Volume of this Waste Shipped: 3.02 tons

## 6. WASTE MINIMIZATION STATEMENT

☐ Not Required (See Instructions)  
☐ Submitted with EPA Biennial Report  
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Name of Responsible Official: Hans Sidler Title: Waste Compliance Engineer

Signed: Date: 2/28/2012



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Name: STABLEX Canada, Inc.  
Address 760 Industrial Blvd.  
Blainville, Quebec Canada J7C3V4  
EPA ID No.: NYD 980756415

3. TRANSPORTER No. 1: Name: Transport Rollex Limitee  
EPA ID No.: NYF 006000053  
TRANSPORTER No. 2: Name: \_\_\_\_\_  
EPA ID No.: \_\_\_\_\_

## 4. WASTE INFORMATION

Description of Waste: Spent Sandblast Abrasives  
EPA Waste Numbers: D008, D007  
DOT Proper Shipping Name: Hazardous Waste, Solid, n.o.s., (Lead, Chromium), III, RQ-10 (Lead)  
DOT Hazard Class: 9 DOT ID Code (UN/NA): UN 3077

## 5. SHIPPING INFORMATION

Number of Shipments during the Calendar Year: 1  
Total Volume of this Waste Shipped: 0.49 tons

## 6. WASTE MINIMIZATION STATEMENT

☐ Not Required (See Instructions)  
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Name of Responsible Official: Hans Sidler Title: Waste Compliance Engineer

Signed: Date: 2/28/12

## ANNUAL REPORT OF HAZARDOUS WASTE EXPORTS FOR 2011

## 1. PRIMARY EXPORTER (Consignor)

Name: ConocoPhillips Company / Bayway Refinery  
 EPA ID No. NJD 986645984  
 Mailing Address: P.O. Box 222  
 City: Linden State: New Jersey Zip: 07036

## 2. CONSIGNEE

Name: Clean Harbors Canada Inc.  
 Address RR#1, 4090 Telfer Side Road  
Corunna, Ontario, Canada N0N 1G0  
 EPA ID No.: MIR 000035204

3. TRANSPORTER No. 1: Name: Freehold Cartage Inc.  
 EPA ID No.: NJD 054126164  
 TRANSPORTER No. 2: Name: N/A  
 EPA ID No.: N/A

## 4. WASTE INFORMATION

Description of Waste: Processed federal listed hazardous clarified slurry oil sediment

EPA Waste Numbers: K170

DOT Proper Shipping Name: Waste Environmentally Hazardous Substances, Liquid, n.o.s., (K170), PG III, RQ-1

DOT Hazard Class: 9 DOT ID Code (UN/NA): UN 3082

## 5. SHIPPING INFORMATION

Number of Shipments during the Calendar Year: 14  
 Total Volume of this Waste Shipped: 279.61 tons

## 6. WASTE MINIMIZATION STATEMENT

☐ Not Required (See Instructions)  
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☒ Attached

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Name of Responsible Official: Hans Sidler Title: Waste Compliance Engineer

Signed: 

Date: 2/28/2012



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Blainville, Quebec Canada J7C3V4  
EPA ID No.: NYD 980756415

3. TRANSPORTER No. 1: Name: Freehold Cartage Inc.  
EPA ID No.: NJD 054126164  
TRANSPORTER No. 2: Name: \_\_\_\_\_  
EPA ID No.: \_\_\_\_\_

## 4. WASTE INFORMATION

Description of Waste: API Separator Solids  
EPA Waste Numbers: K051  
DOT Proper Shipping Name: Hazardous Waste, Solid, n.o.s., (K051), III, RQ-10 (K051)  
DOT Hazard Class: 9 DOT ID Code (UN/NA): UN 3077

## 5. SHIPPING INFORMATION

Number of Shipments during the Calendar Year: 42  
Total Volume of this Waste Shipped: 785.53 tons

## 6. WASTE MINIMIZATION STATEMENT

☐ Not Required (See Instructions)  
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☒ Attached

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Name of Responsible Official: Hans Sidler Title: Waste Compliance Engineer

Signed: 

Date: 2/28/2012

**Waste Minimization Statement for Hazardous Characteristic Contaminated Spent Sandblast Abrasives**

The ConocoPhillips Company owned and operated Bayway Refinery is committed to operating the refinery in an environmentally responsible manner. A source reduction program has been implemented and is continuously being improved.

The Bayway Refinery utilizes crude petroleum as feed stock to produce a complete line of fuel products as well as petrochemical feed stocks and specialty products. The facility does not purchase or produce lead or other hazardous characteristic containing products. The Bayway Refinery uses only environmentally friendly, non-lead based coatings on new and repaired equipment.

As part of the operations of the refinery, rust, scale and paint are removed from transfer lines, storage tanks and process equipment by sand blasting with abrasives in order to prepare surfaces for metal inspection, welding or repainting. Employees have been informed of the potential for lead based coatings at the refinery. They are trained to test dry paints and primers prior to removal and to segregate contaminated media from each job site regardless of generated volume.

Old protective coatings slated for removal are tested by analysis and/or lead stick for lead content. Rather than using a dry sandblast technique, lead based paint from transfer lines, storage tanks and process equipment in difficult to access areas is removed by scraping or by high pressure water and wet garnet blasting, whenever feasible.

Paint removal from tanks is accomplished by either pressure washing, or by utilizing the "Versa Blast" vertical blast cleaning system. The system cleans vertical surfaces by using steel split shot and a very small amount of grit as the blast cleaning media. A hoist system, which is mounted on a fixture at the top of the tank being cleaned, raises and lowers the blast module as the module moves along the surface horizontally. The system is capable of providing white metal finishes.

The horizontal speed, vertical speed, shot flow rate, and fixture movement are adjusted by remote control. The abrasive media are contained, circulated, and cleaned within the blast module. A cyclone separator on the ground separates the steel split shot from the media for re-use and deposits the paint and dust into plastic lined 55-gallon drums. The process reduces the volume of generated lead contaminated hazardous abrasives by up to 95%.

The Bayway Refinery has considered several waste management method alternatives. On-site remediation or fixation of the lead constituent contained in the waste is not feasible because of cost and the lack of treatment permits. Treatment of the low BTU waste by incineration does not reduce the lead hazard and would result in impermissible dilution of the lead component in the incinerator ash.

This minimization statement pertains to shipments of Hazardous Characteristic Contaminated Spent Sandblast Abrasives on pages 1 and 5 of the annual report.



**Waste Minimization Statement for Spent Lead Acid Batteries**

The ConocoPhillips Company owned and operated Bayway Refinery is committed to operating the refinery in an environmentally responsible manner. A source reduction program has been implemented and is continuously being improved.

The Bayway Refinery has approximately 100 substations which distribute electric power to the various process units. Energy for the substation switchgear and control panels is provided by twelve to sixty lead acid batteries per station. These batteries are periodically replaced to ensure a reliable and uninterrupted electric power supply to the refinery.

The Bayway Refinery is taking source reduction action to reduce the volume of generated used lead acid batteries from substations by choosing high-grade replacement batteries that have an estimated useful service life of more than twenty years. The refinery purchases automotive lead acid batteries for its fleet of cars, trucks and heavy equipment, as they are replaced, an equivalent number of spent automotive batteries are returned to the supplier for recycling.

The Bayway Refinery has considered several waste management method alternatives for lead acid batteries from substations. Shipping these batteries for metal reclamation to a lead smelter in Missouri is deemed unacceptable because of potential future environmental liability concerns. State and Federal agencies have determined that many residential properties in the vicinity of the Missouri plant have been contaminated by lead emissions from the smelting operation. The facility has also received many citations and fines.

In the absence of an alternate and readily available lead smelting facility which is protective to human health and the environment, the Bayway Refinery believes that the present method of shipping the batteries to a competent and experienced waste management service provider for treatment and disposal to be an environmentally sound option.

This minimization statement pertains to shipments of Spent Lead Acid Batteries on page 2 of the annual report.



**Waste Minimization Statement for Mixed Batteries**

The ConocoPhillips Company owned and operated Bayway Refinery is committed to operating the refinery in an environmentally responsible manner. A source reduction program has been implemented and is continuously being improved.

Bayway Refinery employees and contractors use a variety of equipment and tools that are powered by batteries, including alkaline, silver oxide, lithium, nickel/metal hydride and various other types. Spent batteries are collected and placed into satellite accumulation containers.

The Bayway Refinery has considered sorting the batteries by type in order to make them amenable to metal reclamation. Spent batteries come in all shapes and sizes and vary in length from a fraction of an inch to several inches each. Experience has shown that sorting of those batteries by type to render them acceptable for metal reclamation is tedious, time consuming and subject to human error. Sorting and subsequent transportation of the small volume of generated batteries to various facilities is not cost-effective.

The Bayway Refinery believes that the proper treatment and disposal of a limited volume mixed batteries by a competent and experienced waste management service provider is protective to human health and the environment and constitutes currently the most economically practicable waste management option available to us.

This minimization statement pertains to shipments of Mixed Batteries on pages 3 of the annual report.

### **Waste Minimization Statement for Spent listed Hazardous K171 Catalyst**

The ConocoPhillips Company owned and operated Bayway Refinery is committed to operating the refinery in an environmentally responsible manner. A source reduction program has been implemented and is continuously being improved.

The Bayway Refinery utilizes crude petroleum as a feed stock to produce a complete line of fuel products as well as petrochemical feed stocks and specialty products. As part of the operations of the refinery, a sulfur guard bed at the Hydrogen Process Unit was placed into service to remove trace amounts of sulfur contaminants from natural gas feedstock. The sulfur contaminants are removed by contacting the product with a Zinc oxide catalyst (ZnO).

Over time, the sulfur removal efficiency of the ZnO oxide catalyst decreases. The reactor is taken off-line and isolated. The spent catalyst is cooled to ambient temperatures and placed into 55-gallon capacity drums. Representative samples are taken and submitted to a State certified third-party contract laboratory for the analysis of waste classification parameters.

The Bayway Refinery has carefully evaluated a number of other catalysts to effect the removal of trace level sulfur contaminants from natural gas feedstock. The ZnO replacement catalyst was chosen because it is more reactive with sulfur and is capable of higher sulfur loading. Since ZnO catalyst requires less frequent catalyst change-outs, lesser volumes of spent catalyst will be generated. Strict adherence to detailed catalyst deactivation and change-out procedures reduces toxicity.

The Bayway Refinery has considered several waste management method alternatives for the spent ZnO catalyst. Off-site thermal treatment is not cost-effective and provides minimal environmental benefit since the sum of all organic constituents in the spent ZnO catalyst comprises less than 0.05 percent of the total spent catalyst volume. Furthermore, treatment of the spent ZnO catalyst by incineration does not reduce the arsenic hazard and would result in impermissible dilution of the arsenic component in the incinerator ash.

The Bayway Refinery has contacted several domestic metal reclamation facilities. Most of the plants determined that spent ZnO catalyst is not compatible with their metal reclamation process. Facilities that could have processed the catalyst lacked RCRA hazardous waste permits. The Bayway Refinery believes that Stablex, with its considerable expertise in the chemical treatment and fixation of inorganic waste constituents, is currently the best available option for the environmentally sound disposition of deactivated spent ZnO catalyst.

This minimization statement pertains to shipments of Catalyst Desiccant on page 4 of the annual report.



**Waste Minimization Statement for Centrifuged Clarified Slurry Oil Sediment  
Generated by the Upgrading of "High Ash" Slurry Oil Product**

The ConocoPhillips Company owned and operated Bayway Refinery is committed to operating the refinery in an environmentally responsible manner. A source reduction program has been implemented and is continuously being improved.

The Bayway Refinery utilizes crude petroleum as feed stock to produce a complete line of fuel products as well as petrochemical feed stocks and specialty products. As part of the various operations at the refinery, clarified slurry oil product is stored in tanks for sale to customers. The product contains up to 0.6% Fluid Catalytic Cracking Catalyst.

The quality of clarified "high ash" slurry oil is upgraded by removing most of the remaining sediment from the product by mechanical means. The oil is heated to 300 degrees Fahrenheit and processed at high gravitational forces through vertical centrifuges. Phases are separated into 90% valuable clean product and 10% sediment laden centrate.

The Bayway Refinery is taking source reduction action to reduce the volume and the toxicity of generated slurry oil sediment cake by choosing experienced, competent and reliable contractors and employing specialized equipment, innovative processing methods, and best available technology. More than 99% clean valuable product is recovered.

The Bayway Refinery currently generates over 6000 tons of K170 listed slurry oil centrate per year. The Bayway Refinery has considered several waste management method alternatives including reuse of the material as an asphalt substitute, the material is currently sent to RCRA permitted cement kilns in the U.S. Mid-West for energy recovery. The waste stream as currently generated consists of 90% heavy fuel oil and 10% organic aluminum silica equilibrium catalyst fines. The fuel oil component heats the cement kiln and the alumina silicate catalyst is a co product used in the manufacture of Portland cement. Occasionally economic down turns and maintenance activities make the reuse option in the United States unavailable and a fraction of the waste material is exported to Canada for disposal. The material is almost completely destroyed during disposal and the small amount of ash left over is sent to landfill. The volume of waste landfilled after destruction exported represents 0.4% of the volume of this material that is otherwise used for energy recovery in the United States. The Bayway Refinery believes the present waste management method to be an environmentally sound method of disposal of material that we can not recycle.

This minimization statement pertains to shipments of Centrifuged Clarified Slurry Oil Sediment on pages 6 of the annual report.



**Waste Minimization Statement for Dewatered Waste Water Treatment Plant Sludge**

The ConocoPhillips Company owned and operated Bayway Refinery is committed to operating the refinery in an environmentally responsible manner. A source reduction program has been implemented and is continuously being improved.

The Bayway Refinery utilizes crude petroleum as feed stock to produce a complete line of fuel products as well as petrochemical feed stocks and specialty products. During the various operations which occur at the refinery (refining, pumping, storage, transfer, etc.) oily process wastewater is generated and conveyed via a segregated sewer system to the refinery's wastewater treatment plant. Oil and oily emulsions are recovered in API separator channels and pumped to skimmed oil tanks for recovery.

Water separates by gravity. Recovered oil is utilized as raw material feed stock in the refinery's production process. The water phase is discharged to surface waters in compliance with the refinery's existing NPDES permit after treatment by phase separation, neutralization, equalization, activated sludge oxidation, clarification, dissolved air floatation and mixed media filtration. Oily solids settle to the bottom of the separators and are periodically removed by mechanical means.

In addition to K051 API separator sludge, F037 primary sludges are generated from the gravitational separation of oil, water and solids during the storage of process waste waters in storm water units receiving dry weather flow and during storage in other conveyances. K049 listed solids are generated by the treatment of slop oil emulsions from the refinery's process units.

The Bayway Refinery is taking source reduction action to reduce the volume and the toxicity of materials generated by segregating and processing wastes, whenever feasible, upstream before they enter the process sewer system and become a federal listed hazardous waste. A stripper tower upstream of the wastewater treatment plant removes substantial amounts of benzene and other volatile organic constituents. Once-through cooling water and uncontaminated rainwater from the refinery's tank fields are segregated from the process water collection and treatment system.

The material removed from the separator is pumped to plate and frame filter press to remove much of the oil and water content. Removal of the liquids reduces the toxicity and volume of off-site shipments. A significant quantity of clean oil was recovered from the sludge and reintroduced to the refining process.

The Bayway Refinery has considered several waste management method alternatives. Since the dewatered and deoiled media contain a high component of inorganic sand, sediment and grit and have a very low BTU content, the Bayway Refinery believes the present waste management method to be an environmentally and economically sound option.